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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,295	03/28/2006	Olivier Andrieu	05162	3320

23338 7590 03/27/2007  
DENNISON, SCHULTZ & MACDONALD  
1727 KING STREET  
SUITE 105  
ALEXANDRIA, VA 22314

EXAMINER
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SCHINDLER, DAVID M

ART UNIT	PAPER NUMBER
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2862

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/27/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/560,295	<b>Applicant(s)</b> ANDRIEU ET AL.	
	<b>Examiner</b> David M. Schindler	<b>Art Unit</b> 2862	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/5/2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 13-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-19 and 25 is/are rejected.
- 7) ☒ Claim(s) 20-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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**DETAILED ACTION**

1. This action is in response to the communication filed 12/5/2006. Upon further consideration, the previously indicated allowable subject matter is withdrawn.

***Response to Arguments***

2. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 13, 14, 15, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Oyama et al. (Oyama) (5,574,365).

As to Claim 13,

Oyama discloses an open magnetic circuit including means for creating a magnetic flux which is mounted and displaceable by the moving object (Figure 3), at least one pole piece associated with the means for creating a magnetic flux, and

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which is orientated at least perpendicularly to a surface of the pole piece with at least one gap being delimited by the surface of the pole piece and the means for creating the magnetic flux, a magnetic leakage flux emerging from the pole piece having a strength which varies at the surface of the pole piece along the axis of displacement, at least one first measuring cell (3) which is capable of measuring the value of the magnetic flux relative to the axis of displacement, the measuring cell being mounted near an extreme point of displacement to determine thereby magnetic flux delivered by the means for creating a magnetic flux minus the magnetic leakage flux, and means for processing the output signal delivered by the measuring cell in order to determine the linear location of the moving object along the axis of displacement ((Figures 3 and 4) and (Column 3, Lines 55-58) and (Column 4, Lines 30-67) and (Column 5, Lines 1-23)).

(Note that while Oyama does not explicitly disclose a means for processing the output signal delivered by the measuring cell, Oyama must nevertheless include a means for processing the output signal delivered by the measuring cell as claimed in order to produce the information depicted in Figure 4).

As to Claim 14,

Oyama discloses a second measuring cell fixedly mounted in

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the magnetic circuit so as to measuring the magnetic flux delivered by the means for creating the flux minus the magnetic leakage flux (Figure 3).

As to Claim 15,

Oyama discloses the means for creating a magnetic flux is mounted to be displaceable in translation (Figure 3).

As to Claim 25,

Oyama discloses the gap is fixed in distance along the length of travel of the object (Figure 3).

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
7. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oyama et al. (Oyama) (5,574,365) in view of Hinz et al. (Hinz) (2002/0171318).

As to Claim 16,

Oyama discloses as explained above.

Oyama does not disclose the processing means for determining the location of the moving object calculates the difference between the output signals delivered by the first and the second measuring cells.

Hinz discloses the processing means for determining the location of the moving object calculates the difference between the output signals delivered by the first (3) and the second (4) measuring cells ((Abstract) and (Page 3, Paragraphs [0038]-[0051])).

It would have been obvious to a person of ordinary skill in the art to modify Oyama to include the processing means for determining the location of the moving object calculates the difference between the output signals delivered by the first and the second measuring cells as taught by Hinz in

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order form sum and difference signals that has the great advantage that these signals always exhibit a phase shift of 90 degrees relative to one another so these signals can be evaluated in the convention way in order to determine the position and angle (Page 1, Paragraph [0009]).

As to Claim 17,

Oyama does not disclose the processing means for determining the location of the moving object calculates the difference between the output signals delivered by the first and second measuring cells, divided by the sum of the output signals delivered by the first and second measuring cells.

Hinz discloses the processing means for determining the location of the moving object calculates the difference between the output signals delivered by the first (3) and second (4) measuring cells, divided by the sum of the output signals delivered by the first and second measuring cells ((Abstract) and (Page 3, Paragraphs [0038]-[0051])).

It would have been obvious to a person of ordinary skill in the art to modify Oyama to include the processing means for determining the location of the moving object calculates the difference between the output signals delivered by the first and second measuring cells, divided by the sum of the output signals delivered by the first and second measuring cells as taught by

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Hinz in order to form sum and difference signals that has the great advantage that these signals always exhibit a phase shift of 90 degrees relative to one another so these signals can be evaluated in the convention way in order to determine the position and angle (Page 1, Paragraph [0009]).

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oyama et al. (Oyama) (5,574,365) in view of Schroeder (2002/0109501).

Oyama discloses as explained above.

Oyama does not disclose the processing means include means for analyzing each output signal in an independent or combined manner in order to determine operating state of each measuring cell.

Schroeder discloses the processing means include means for analyzing each output signal in an independent in order to determine operating state of each measuring cell (Figure 5) and (Page 2, Paragraphs [0013]-[0015] and [0022])).

It would have been obvious to a person of ordinary skill in the art to modify Oyama to include the processing means include means for analyzing each output signal in an independent or combined manner in order to determine operating state of each measuring cell as taught by Schroeder in order to provide



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advantageously a malfunction detector for MR position sensors (Page 2, Paragraph [0015]).

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oyama et al. (Oyama) (5,574,365) in view of Schroeder et al. (2003/0034775).

Oyama discloses the means for creating a magnetic flux includes a magnetized annular component having an axis which is parallel to an axis of translational displacement (Figure 3).

Oyama does not disclose that the means for creating a magnetic flux includes a radially magnetized annular component.

Schroeder et al. discloses the means for creating a magnetic flux includes a radially magnetized annular component (Figure 4).

It would have been obvious to a person of ordinary skill in the art to modify Oyama to include the means for creating a magnetic flux includes a radially magnetized annular component as taught by Schroeder et al. in order to utilize a readily available component to produce a magnetic field.

***Allowable Subject Matter***

10. Claims 20-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

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independent form including all of the limitations of the base claim and any intervening claims.

11. The following is an examiner's statement of reasons for allowance:

As to Claim 20,

The primary reason for the allowance of claim 20 is the inclusion of the means for creating a magnetic flux includes a series of four magnets having magnetization directions which are shifted by 90 degrees.. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claim 21,

The primary reason for the allowance of claim 21 is the inclusion of the open magnetic circuit includes a second pole piece positioned facing the first pole piece, and delimiting a gap therebetween. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to

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avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **Conclusion**

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Schindler whose telephone number is (571) 272-2112. The examiner can normally be reached on Monday-Friday (8:00AM-5:00PM).

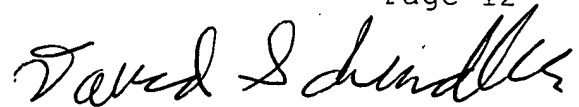
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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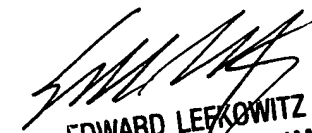


David M. Schindler

Examiner

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DMS



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SUPERVISORY PATENT EXAMINER  
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